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Masked Men Hang on a "Sky-hook"—Following a test at Nevada Proving Ground of the U. S. Atomic Energy Commission, a helicopter hovers above the blast area. Protected by respirators, masks, and thick clothing, its occupants measure radioactivity with Geiger counters (box, center). When radiation subsides, ground check begins.

(SEE BULLETIN NO. 4)

DEPARTMENT OF DEFENSE

were popular with settlers in the Mississippi delta two centuries ago. Later, Twelfth Night was chosen to mark the start of the carnival season. The first organized New Orleans Mardi Gras street parade marched on February 27, 1838. In 1857 floats and torches were added.

Rex, king of all carnival kings, Lord of Misrule, first appeared in 1872. In 1875 Fat Tuesday was made a legal holiday in New Orleans. It takes its name from the old French custom of parading through the streets a *boeuf gras* (fat beef) before roasting it for a village feast.

By 1881 the Mardi Gras parades were attracting as many as 60,000 to the Louisiana city. This year a quarter of a million visitors are expected to invade New Orleans for what has been termed "the greatest free show on earth."

Mystick Krewe of Comus—From dawn to midnight, merrymakers throng the streets, masked and disguised as such assorted characters as knights, alligators, clowns, Turks, gypsies, gorillas, and Indians. Parades pass through the crowded streets for hours (illustration, back cover). The festival ends with two magnificent balls given in the Municipal Auditorium. Hosts at one are the Mystick Krewe of Comus, oldest of the numerous "krewes" or clubs which organize the various pageants and balls. The other festivity is given by the carnival's King Rex.

There have been a few temporary eclipses of the spectacle. The Spaniards, when they ruled New Orleans, once banned it. They claimed criminals were taking advantage of the fact that their masked faces could not be recognized. The carnival was suspended for the four years of the Civil War, and was suppressed briefly during the Reconstruction years that followed. It was suspended again for two years during World War I and for four years during World War II.

Floats Both Realistic and Fantastic—Mardi Gras parades are based on historical, legendary, and mythological themes. Each parade features some twenty floats. These are wheeled flatcars twenty feet long and eight feet wide, topped with elaborate papier-mâché creations. They depict historic events, incidents from myth, legend, or sheer imagination; and transport in suitable grandeur the various kings and queens representing carnival royalty. Floats and costumes for each parade may cost $20,000 or more, and they are shown only once.

The production of costumes, floats, and stage sets has developed into a multimillion-dollar home industry in New Orleans. All floats are built in strictest secrecy so that the parade theme comes as a surprise to the audience.

References—Louisiana is shown on the National Geographic Society's map of the South Central United States. Write the Society's headquarters, Washington 6, D. C., for a price list of maps.

See also "Map Marks 150th Anniversary of Louisiana Purchase," in *The National Geographic Magazine*, June, 1953; "New Orleans: Jambalaya on the Levee," February, 1953; "Louisiana Trades with the World," December, 1947; "How We Use the Gulf of Mexico," January, 1944; and "Louisiana, Land of Perpetual Romance," April, 1930. *(Issues of The Magazine 12 months old or less are available to schools and libraries at a specially discounted price of 50¢ a copy. Earlier issues sell for 65¢ a copy through 1946; $1.00, 1930-1945; $2.00, 1912-1929. Write for prices of issues prior to 1912.)*

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UMI

Bulletin No. 1, February 22, 1954

Mardi Gras Climaxes New Orleans Carnival

With only a few more days to go, the New Orleans carnival season is stepping up its brisk pace to the climax of Mardi Gras. Mardi Gras, meaning "Fat Tuesday," falls on March 2 this year. It is the last day before Lent, which begins with Ash Wednesday. Its glittering burst of pageantry ends the revelry which began on Twelfth Night (January 6).

Art, Religion, History Merge in "America's Paris"—At a gate of Jackson Square an artist is all set to paint to your order. In St. Louis Cathedral (rear) Andrew Jackson attended service after his victory over the British, 1815.

JUSTIN LOCKE

During these gay weeks of the mild Louisiana winter, a score of parades and more than fifty balls enliven the beautiful Crescent City—so called from its original pattern following a Mississippi bend.

The origin of Mardi Gras goes back to ancient pagan rites celebrating the return of spring. Many European and Latin American cities have picturesque pre-Lenten celebrations, but the New Orleans Mardi Gras ranks with the finest for sheer shimmering splendor. Since it was imported from Europe by the French who settled New Orleans in 1718, it has grown to be one of the most famous municipal entertainments in the United States.

Masquerade dances in a ten-day pre-Lenten period

Bogotá, the capital, was founded in 1538. Of the 11,266,000 Colombians, some 570,980 live in the rarefied air of that city's 8,660-foot elevation. At such heights, even in the Tropics, the early morning air and the waters of mountain streams are bitingly cold. A North American visitor observed barefoot natives, dressed only in cotton shirts and trousers, standing in a stream panning for a possible gold nugget. He inquired through chattering teeth how they could work in such cold water.

Looking at the stranger's field boots, heavy trousers, sweater, jacket, and gloves, they replied, "Señor, you have cold because your body must heat all those clothes, retaining nothing for itself."

References—Colombia is shown on the Society's map of South America.

For additional information, see "Jungle Jaunt on Amazon Headwaters," in *The National Geographic Magazine*, September, 1952; "Keeping House for a Biologist in Colombia," August, 1948; "Cruising Colombia's 'Ol' Man River'," May, 1947; "Hail Colombia!" October, 1940; and "Stone Idols of the Andes Reveal a Vanished People," May, 1940.

Bogotá Nestles among Andean Ridges—Though less than five degrees from the Equator, the Colombian capital enjoys a mild climate because of its elevation of more than a mile and a half. Bogotá may be reached by river steamer and rail from Caribbean ports in about a week—by air in two and a half hours. The large, square building in the foreground is the Capitol. It faces Plaza Bolívar. The twin-towered Cathedral rises just beyond. The Chapel of Monserrate perches on a mountain top.

Bulletin No. 2, February 22, 1954

Colombian Culture Spans Seas and Centuries

Due to arrive soon at the Metropolitan Museum in New York is a fabulous collection of gold art objects from the South American Republic of Colombia. Fashioned by Indians before the Spanish came, many of the artifacts were found buried in the graves of chiefs. Pieces have continued to come to light until the principal collector—the Bank of the Republic in Bogotá—has amassed 6,700 glittering items.

Eighty selected pieces are to be exhibited in New York, and later in San Francisco. When first shown at the National Gallery of Art in Washington, D. C., 4,000 eager viewers lined up on opening night.

Worth Waiting to See—"These things would be worth seeing, even if they were brass," one visitor commented after an hour-long wait in line.

Unearthed by accident from lost hiding places, or found in forgotten graves, the golden pendants, earrings, nose clips, breastplates, vases, and other such objects comprise a priceless record of early American civilization. Opening the exhibit, the Colombian ambassador said, "It is our belief that by presenting to the United States public these masterpieces of pre-Hispanic gold work, the ties of friendship and cooperation . . . will be greatly strengthened between our two nations."

Valuables other than gold are found in the 439,520 square miles of mountains, plains, and valleys of Colombia, the rich land forming the northwest shoulder of the southern continent. Its coasts are bathed by waters of the Caribbean to the north and by the Pacific on the west. Though ranking fourth in size among South American countries, it is the only one with both Atlantic and Pacific ports.

Named for Columbus—Discovered in 1499 by Alonso de Ojeda, Spanish explorer, Colombia was originally called New Granada and included all the area now known as Venezuela, Ecuador, Panama, and Colombia. It was later renamed in honor of Christopher Columbus.

Tales of untold wealth hidden in mountain and valley lured Spanish conquistadores, English freebooters, and other opportunists to the region. The current exhibit of art objects, many of which were hidden by their owners to keep them from foreign hands, indicates there was truth in the rumors. Gold was so common that fishermen made hooks of it.

Gold, platinum, silver, copper, and other metals are still mined in Colombia. Emerald mines in operation for 400 years have produced world-famous gems. Centuries-old salt mines, with miles of galleries carved from the mountains north of Bogotá, dazzle visitors with their almost cathedral-like grandeur. Vast reservoirs of oil in the lowlands feed pipe lines. Forest products, including mahogany, dyewoods, and cedar are valuable. Rubber trees, which once grew wild on the mountain slopes, now are carefully cultivated. The bark of the cinchona tree possesses a powerful "bite." Bitter quinine is derived from it.

Coffee Leads Crops—Coffee is the leading crop and it far surpasses all other agricultural exports. Bananas come second. Rice, tobacco, cotton, and wheat fill domestic needs. Despite Colombia's great mineral wealth, its chief industry is farming.

Through once-magnificent oak forests swept the hordes of Alaric the Goth with the spoils of Rome. Hannibal's elephants trampled the olive groves and the vineyards that grew in the volcanic soil.

Normans, Byzantines, and Saracens of Algiers, in turn, laid waste the land. The brigand allies of the Spanish Bourbons who ruled the Kingdom of the Two Sicilies in the eighteenth and nineteenth centuries added to the devastation.

Nature also took a hand in the havoc. Earthquakes multiplied the destruction begun by man. Rivers in flood rampaged through ruined forests. In the swamps formed by these runaway rivers, swarms of deadly mosquitoes arose. Wolves foraged literally to the doors of hovels where people lay burning and shivering with malaria.

Italy's South Like Foreign Land—Long after Garibaldi had helped unify Italy in 1860, Lucania and neighboring Calabria were almost as strange and unknown to northern Italians as is New York to a Greenland Eskimo. Tax collectors from Rome were the only regular visitors. The inhabitants were left to a dismal state of illiteracy and barbarism.

When Mussolini rose to power in the 1920's, the government drained a few of Lucania's swamps, hoping to stem a tide of emigration to America and north Italy that threatened to depopulate the whole south. During World War II, fighting between the retreating Germans and General Montgomery's Eighth Army wrecked the few improvements.

When hostilities ceased, the Italian government first rebuilt the million or more Italian homes destroyed in the fighting. Then it turned its attention to the age-old "Question of the South." Matera is among the first areas to be improved in the long-neglected region.

Other unusual dwellings on the heel of Italy's "boot" are the *trulli*—stone cottages with high conical roofs. These peaked limestone structures dot the land for miles around the villages of Francavilla and Alberobello, a few miles east of Matera.

Walls Built Without Mortar—Although above the ground, the trulli are somewhat similar to caves, with their drystone walls measuring five to seven feet thick and their few and deepset windows allowing little light to enter. Most are detached farmhouses rising from stony fields, but occasionally blocks of them are seen in villages.

In building a trullo, the farmer does something more constructive than kill two birds with one stone—he builds a home with them, while removing them from a field so that it can be planted to fruit trees and vines. Peaches, plums, cherries, and almonds are grown, but the olive is king crop. Olive oil is the region's most important product.

References—The region where Italy's cave dwellers are being moved to new homes may be located on the Society's maps of Central Europe, and Europe and the Near East.

For further information, see "A Stroll to Venice," in *The National Geographic Magazine*, September, 1951; "The Palio of Siena," August, 1951; "Italy Smiles Again," June, 1949; "Ancient Rome Brought to Life," November, 1946; "Italy, From Roman Ruins to Radio," March, 1940; "Imperial Rome Reborn," March, 1937; "Sojourning in the Italy of Today," September, 1936; "Life's Pattern on the Italian Riviera," January, 1935; "Stone Beehive Homes of the Italian Heel," February, 1930; and, in the GEOGRAPHIC SCHOOL BULLETINS, February 2, 1953, "Solfatara Is Harmless Neighbor of Vesuvius"; and "Pompeii Continues to Yield Secrets," December 11, 1950.

UMI

Bulletin No. 3, February 22, 1954

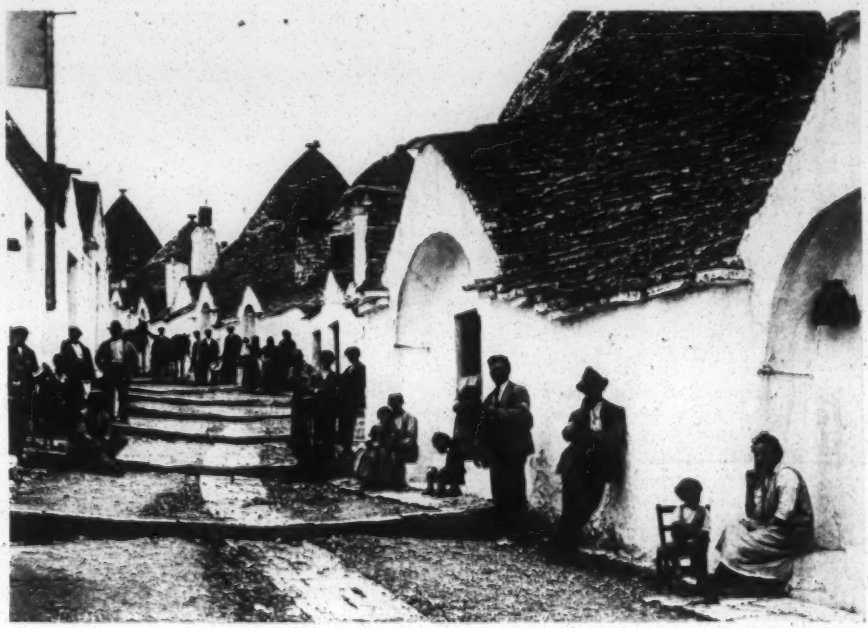
Italy's Matera Cave Dwellers Find New Homes

After 3,000 years, escape is at hand for the cave dwellers of Matera in southern Italy's desolate, rock-bound Lucania. Matera is sometimes called "the Subterranean City" because most of its residents live underground and two of its churches are rocky caves.

With American aid, the postwar government of Italy has already moved fifty families out of Matera's *Sassi* district—*sassi* means "stones," and also, in classical Italian, "tombs"—to the new model village of La Martella, a few miles to the north.

Eventually all the 15,000 troglodytes (cave dwellers) will be moved to La Martella or similar modern communities. The 2,142 dank, gloomy caverns are to be abandoned forever. In the thirty centuries during which these unhealthful dens have been occupied, half the community's children have died.

Held Back by War and Disease—War and malaria have been twin curses of Lucania since it was part of ancient Magna Graecia, as the group of Greek colonies in southern Italy was called before the Christian era. Along swampy sea coasts and in gloomy gorges of the Apennines, cousin fought cousin in warfare between city-states of ancient Greece.



LUIGI PELLERANO

Trulli Dwellers Bask in the Sun Outside Their Dank Homes—Self-supporting stone roofs are masonry marvels, but poor ventilation makes these south Italian dwellings cavelike. Though no mortar is used, and no grooves are cut in the stones, the cone-shaped structures hold up for centuries. Raised stone ridges allow villagers to cross the street dryshod during heavy rainstorms.

quired hours or days by surface routes. It transported armed battalions on surprise attacks and kept them supplied. It sped front-line casualties to the safety of hospital ships in Inchon harbor.

Long before the Korean war the obvious military merit of the helicopter had spurred American and British Government financial support of its development. That support is now reflected in new military models ranging all the way from the 400-pound Jet Jeep with pulse-jet engines at its rotor tips to the giant transport pictured above. It is reflected in current helicopter progress in peacetime uses.

For six years Los Angeles Airways has carried air mail by "whirlybird" in its vast metropolitan area. Chicago has had its similar Helicopter Air Service almost as long. New York Airways carries mail, freight, and passengers between airports (International, La Guardia, and Newark) and to neighboring cities from New Jersey to Connecticut. Some fifty applications are pending before the Civil Aeronautics Board for certificates to establish helicopter routes.

Abroad, Sabena-Belgian Airlines has started intercity service by transport helicopter that cuts city-to-city time in western European travel. Experts see a rapid growth in such short-haul operations on both sides of the Atlantic by 1960, when fleets of multi-engined helicopters seating forty passengers and flying 125 or more miles an hour should be available. These, they predict, will take over most intercity runs of under 300 miles.

Vacant-lot Airports—Fixed-wing planes, they point out, lose money on the short runs and offer no saving in time because their airports usually lie outside the cities. Helicopters can land on central-city vacant lots or at rooftop heliports.

Permanence of the heliport's immediate surroundings in each city presents a serious problem to be worked out by airlines real-estate specialists. Noise is an obstacle, both as it affects the passenger and business life near the heliport. Engineers are working on the problem of muffling high-powered motors.

Each year produces new performance records by helicopters. In July, 1952, two United States military Sikorskys made the first rotary-wing crossing of the Atlantic via Labrador, Greenland, Iceland, and Scotland. Their last lap of 940 miles set a nonstop record that was raised to 1,234 miles before the year was out. The National Air Show at Dayton, Ohio, last September produced a helicopter altitude record of 22,289 feet and a speed record for level flying of 147 miles an hour.

One industry leader foresees a nonstop range of 2,500 miles. Speeds may reach 170 miles an hour with rotors alone. By combining rotary wings for take off and landing and fixed wing for forward speed, a compound aircraft of the future may fly 500 miles an hour. This "convertiplane" principle has been successfully tested in flight. Four plane manufacturers have military contracts to build test versions.

References—For further information on helicopters, see "Aviation Looks Ahead on Its 50th Birthday," in *The National Geographic Magazine*, December, 1953; "Seeking the Secrets of the Giants," September, 1952; "Flying in the 'Blowtorch' Era," September, 1950; "Our Air Age Speeds Ahead," February, 1948; and "Aviation in Commerce and Defense," December, 1940.

UMI

PHILADELPHIA INQUIRER

World's Largest Helicopter—YH-16 Transporter, first exhibited September 13, 1953, at Philadelphia Airport, dwarfs other Piasecki two-engine models, the H-21, hovering, and the HUP-2, foreground. The Transporter can carry 40 soldiers or 32 litter patients, or three jeeps. A planned airline version will seat 48 to 72.

Bulletin No. 4, February 22, 1954

Helicopter Heyday Draws Near

Igor Sikorsky, genius of modern helicopter design, predicted early in World War II that by 1955 the helicopter would be widely used in short-haul airline service and thousands of homes would have a family model in the garage. He set his date a bit early, perhaps, but each year sees the heyday of the helicopter drawing nearer (illustration, cover).

For 10,000 United Nations pilots and soldiers who fought in Korea there is no doubt that the age of the flying windmill is already here. The hovering "eggbeaters" saved that many men downed at sea or trapped close to or behind the fighting front. Last year they also snatched to safety unnumbered survivors of the worst flood to hit the Netherlands in 500 years.

Proved Worth in Korea—No one factor has hastened the dawn of a helicopter era more than the fighting in Korea, 1950-53. The strange craft carried personnel, food, and munitions over water and barren highlands on point-to-point missions, doing in minutes what would have re-

FIELD MUSEUM

One-Man Bands—Malinké tribesmen living near the Niger River's headwaters, upstream from Timbuktu, can sing, dance, pluck strings, and beat drums all at the same time. In time of battle they beat loudly on the gourd resonators as they march ahead of the chief and tribal warriors. In peace they twang their three-string harps.

question mark. Nearly the whole interior was unexplored.

Many adventurers sacrificed their lives in attempts to gain the prize, but it was not until 1828 that a Frenchman, René Caillié, succeeded in visiting Timbuktu and returning safely. He spent two weeks in the city disguised as a Moor.

Timbuktu, as Caillié found it, was no longer a center of culture and boasted none of the fabulous golden treasures ascribed to it by legend. Plundered by invaders from Morocco in 1591, it was further ravaged by repeated raids by nomadic Tuareg bands.

In December, 1893, a French expedition reached the city. Defeated by the Tuaregs, it was reinforced by troops commanded by Joseph Joffre, later a Marshal of France. Today it is officially known as Tombouctou.

References—Timbuktu (Tombouctou) is shown on the Society's map of Africa. For further information, see "Safari Through Changing Africa," in *The National Geographic Magazine*, August, 1953; "South in the Sudan," February, 1953; "White Magic in the Belgian Congo," March, 1952; "Hunting Musical Game in West Africa," August, 1951; "Timbuktu and Beyond," May, 1941; and numerous other articles listed under "Africa" in the *Cumulative Index to the National Geographic Magazine*, which may be found in your school or public library.

Bulletin No. 5, February 22, 1954

Air Age Closes in on Timbuktu

"Two-buck Tim from Timbuktu," a popular-song character some years ago, may soon become better known outside of French West Africa. Air-age civilization is knocking at his door.

A weekly commercial flight across the vast French territory follows the northward buckle of the upper Niger River from Bamako to Gao. It now stops at Goundam, seventy miles southwest of Timbuktu. From Goundam it is only two days by camel or a few hours by motor trail to the fabled town on the southern edge of the Sahara whose name for generations has been synonymous with "the ends of the earth."

Desert Meets River—But though Timbuktu (Tombouctou) may thus have lost some of the glamour of remoteness, it has undergone no great change in its old way of life. Lying 800 miles from the nearest ocean coast (Gulf of Guinea), it remains a trade crossroads where desert camels meet river canoes.

Known as "the port of the Sudan in the Sahara," Timbuktu is a land port first, a river port second. Caravans and motor transports find it a haven. River canoes may visit it only at the rare times of very high water, for it lies nine miles north of the Niger River's main channel. The rest of the year their freight is unloaded at the satellite village of Kabara and carried by donkeyback to Timbuktu.

Twice a year, caravans of as many as 8,000 camels carry produce to Taoudenni, 425 miles north near the Algerian border, and return with salt from its mines. Smaller caravans ply to towns in Algeria and Morocco. Upriver from the southeast come grain, cacao, dried fish, and ivory to be exchanged.

Timbuktu has no paved streets, automobiles, electricity, sewage or water systems, movies, restaurants, or hotels. For eight months of the year the temperature hovers between 100 and 110 degrees in the shade by day and falls to around 90 at night. Brief but torrential rains bring some relief in late summer, but each downpour spells grief to many inhabitants. Their two-storied mud-brick houses are apt to dissolve like sugar.

Moors and Tuaregs of Arabic and Berber stock from the north mingle with native Sudanese and Bela in Timbuktu's narrow streets of ankle-deep sand. Rice, cooked out of doors in public ovens, is the chief food of the city's 7,000 people. Water, scooped from a muddy arm of the Niger, is dispensed from vendors' shoulder-borne goatskins.

Cultural Center—In the fifteenth and sixteenth centuries Timbuktu was a center of the African Moslem culture. Learned men came to the "University of Sankoré." A fine collection of Arabic classic manuscripts was assembled in the walled town. Moslem writers left accounts of its great wealth in gold and ostrich plumes, of camel caravans 10,000 strong that gathered to trade in gold, ivory, and slaves.

The Geographic Society of Paris offered a prize of 10,000 francs for the first European to penetrate the mysteries of Timbuktu and bring back an account of his findings. Africa was then the Dark Continent, a giant

(SEE BULLETIN NO. 1) J. BAYLOR ROBERTS

Along Canal Street—Widest Avenue of New Orleans, and Once a Waterway—Carnival Crowds Leave a Narrow Path for Flower-decked Mardi Gras Floats

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